EXPAND NETWORKS SELECTED FOR US MARINE CORPS DISASTER RECOVERY AND DATABASE REPLICATION PROJECTS IN IRAQ

PROFILE

When the United States' commitment to democracy in challenged, national interests are threatened, or in times of international disaster, crisis, or war, the US Marine Corps is the first on the scene. Whether to aid, or to fight, the US Marines are America's 911 "emergency response" Force. The US Marine Corps stands ready to respond on the ground, in the air, and by sea. This integrated approach distinguishes the US Marine Corps as the United States' premier expeditionary force. Marines are currently deployed and serving throughout the globe.

Multi-National Forces – West, is the highest level of command for the US Marines Corps Marine Air -Ground Task Force (MAGTF) in Iraq.

> " By utilizing the optimization techniques of the Expand Accelerators, the issue was immediately mitigated and we saw throughput increase from around 120k to 6mbs, enabling a smooth and quick transition."

IN SUMMARY

- A constant MS-SQL Replication transfer rate at 5.8 mbps, with no time outs or data corruption, over a 2 mbps link

- NetAPP SNAP Mirror Throughput increase from around 120k to 6mbs

- Significantly increased performance - alleviating the burden of physically updating and flying servers out to the remote locations

APPLICATIONS

- Microsoft Exchange

- SQL

- Windows 2003

- BATS (Biometric Automated Toolset System)

THE CHALLENGES

Using Satellite links for network communications and the back-up of critical data at its most remote locations, the US Marines sought to improve the performance of critical applications over satellite links used in its operations in Iraq.

In particular, the Biometric Automated Toolset System (BATS) is used by all Marines manning military checkpoints in the region and is a significant intelligence application for capturing known or suspected terrorists. Holding sensitive biometric data such as fingerprints and retina scans, BATS is critical to users across the spectrum involved in intercepting suspected terrorists, and it is vital this database remain accurate and updated.

However, design limitations of satellite networks cause high latency and packet loss that can severely affect application performance resulting in delayed file transfer and slow response times.

Captain Criston W Cox, MNF-W Data Systems Officer, comments, "Before implementing the optimization technology, throughput averaged 8 to 9 kbps with multiple timeouts over the TDMA SATCOM links. To overcome the issues, the US Marines regularly updated alternative servers at base and would fly them out to the

isolated sites via helicopters to keep the data updated. This created a significant cost in manpower and air transport requirements."

Experiencing database replication time-outs of the information at its remote locations, the US Marines recognized it could apply a WAN optimization strategy to keep all databases across the region synchronized reliably and efficiently.

THE SOLUTION

The US Marines deployed Expand Networks WAN optimization technology to improve the performance of applications over satellite links used in Iraq and optimize traffic to overcome database replication time-outs of BATS technology between military checkpoints in the region.

Once implemented, the Expand Accelerator's worked with immediate effect, as Cox explains, " Once we put the Expand Accelerator's online, the BATS server interface indicated a constant transfer rate at 5.8 mbps, with no time outs or data corruption, and this was over a 2 mbps link."

THE BENEFITS

The efficient compression and acceleration combined successfully to significantly increase performance, which in turn alleviated the burden of physically updating and flying servers out to the remote locations.

The integrated WAN optimization technology has successfully deployed techniques such as byte-level caching, dynamic compression and acceleration to enable available satellite bandwidth and real-time interactive TCP traffic to be maximized, and continues to optimize traffic to overcome replication time-outs of the critical BATS technology for military checkpoints.

Cox comments, "I based my decision to go with Expand on previously observed performance during my own empirical analysis of several competing Protocol Enhancement Proxies as part of my Naval Postgraduate School thesis work, and have since been very impressed with the product and the team of engineers at Expand who were always available to provide support and quickly answered any technical questions."

Expand Accelerators were also part of the migration of 17 terabytes of data from Camp Fallujah to Al Asad Air Base in support of the MNFW Headquarters Element relocation. To move the data, the US Marines decided to execute the Disaster Recovery plan that was in place in order to back up all data held at Camp Fallujah to the new base at Al Asad.

Cox explains how Expand's optimization technology successfully supported the US Marines relocation, "During the relocation exercise, we noted a performance problem in keeping the NetApps SNAP mirror sessions up-to-date over the link. By utilizing the optimization techniques of the Expand Accelerators, the issue was immediately mitigated and we saw throughput increase from around 120k to 6mbs, enabling a smooth and quick transition."